

Listing of Claims

1. (Currently Amended) A light emitting diode comprising:
a ~~surface mount package~~;
a first metal lead frame having mass sufficient to provide low thermal resistance including at least one anode contact pad and at least one ~~cathode~~ anode contact pad ~~for electrical connection to a circuit board~~;
a second metal lead having mass sufficient to provide low thermal resistance including at least one cathode contact pad and at least one cathode contact for electrical connection to said circuit board;
said cathode contact pad and said cathode contact comprised of a contiguous metal lead and said anode contact pad and said anode contact comprised of a contiguous metal lead;
a reflector ~~positioned within the package~~; and,
a semiconductor die comprising a transparent substrate and a light emitting component, wherein the semiconductor die connects to the metal lead frame via at least two solder bridges positioned within the package between an said anode contact pad and a said cathode contact pad over the reflector; and,
said electrical connection of said circuit board to said semiconductor die being free of wire bond attachment.
2. (Original) The light emitting diode of claim 1 further comprising a focusing dome operative to refract light emitted from the semiconductor die and light reflected from the reflector to create a predetermined radiation pattern.
3. (Original) The light emitting diode of claim 2 wherein the radiation pattern comprises a 120 degree illumination pattern.
4. (Original) The light emitting diode of claim 1 wherein the reflector comprises a truncated cone shape.
5. (Previously Cancelled)

6. (Original) The light emitting diode of claim 1 wherein the lead frame comprises a lead frame having a thermal resistance less than 300 K°/W.
7. (Original) The light emitting diode of claim 1 wherein the lead frame comprises copper.
8. (Original) The light emitting diode of claim 1 wherein the lead frame comprises silver-plated copper.
9. (Original) The light emitting diode of claim 1 wherein the light emitting component comprises a GaN based compound semiconductor and the substrate comprises sapphire.
10. (Original) The light emitting diode of claim 1 wherein the light emitting component comprises an AlInGaP compound semiconductor and the substrate comprises GaP.
11. (Cancelled)
12. (Original) The light emitting diode of claim 1 wherein the substrate is positioned on top of the light emitting component over the reflector.
13. (Previously Added) The light emitting diode of claim 1 wherein the metal lead frame comprises three anode contact pads and one cathode contact pad.
14. (Cancelled).

15. (New) A light emitting diode comprising:

a first metal lead having mass sufficient to provide low thermal resistance including at least one anode contact pad and at least one anode contact for electrical connection to a circuit board;

a second metal lead having mass sufficient to provide low thermal resistance including at least one cathode contact pad and at least one cathode contact for electrical connection to said circuit board;

said cathode contact pad and said cathode contact being comprised of a contiguous metal lead and said anode contact pad and said anode being comprised of a contiguous metal lead;

a semiconductor die comprising a transparent substrate and a light emitting region, wherein the transparent substrate connects to the metal lead frame via a solder bridge between one of said anode contact pad and said cathode contact pad, and said light emitting region connects to the metal lead frame via a solder bridge between the other of said anode contact pad and said cathode contact pad; and,

said electrical connection of said circuit board to said semiconductor die being free of wire bond attachment.